

CLAIMS

1. A method of curing a composition for use with an electronic device comprising the steps of applying the composition to a substrate and subjecting the composition to a near infrared radiation source for a time sufficient to cure the composition.
- 5 2. The method of claim 1, wherein the composition is conductive, resistive or anisotropically conductive.
3. The method of claim 1, further comprising the step of adding a near infrared absorbing additive to the composition before the composition is applied to the substrate.
4. The method of claim 1, wherein the composition is exposed to a near infrared radiation
- 10 source for less than about 10 seconds.
5. The method of claim 4, wherein the composition is exposed to a near infrared radiation source for less than 2 seconds.
6. The method of claim 5, wherein the composition is exposed to a near infrared radiation source for less than 0.5 seconds.
- 15 7. The method of claim 1, wherein the composition is cured by exposure to near infrared radiation having a peak wavelength in the range of from about 700nm to about 5,000nm.
8. The method of claim 1, wherein the composition is cured for a sufficient time so that the resistance of the composition is less than about 2 ohms.
9. The method of claim 8, wherein the composition is cured for a sufficient time so that the
- 20 resistance of the composition is less than about 1.5 ohms.
10. The method of claim 3, wherein the near infrared absorbing additive is selected from the group consisting of broad-band NIR absorbers, carbon black, graphite, Solvent Red (2',3-dimethyl-4-(2-hydroxy-naphthylazo)azo-benzene), Solvent Green, dyes, cyanine-based dyes, oxides, titanium dioxide, tetrakis(dialkylaminophenyl)aminium dyes, squarylium dyes, metal complexes, quinone, azo, radical multiphenylmethane, perylene, aromatic annulenes, fluorenylium, halogen substituted 1,4,5,8-tetraanilioanthraquinones, squaraine, phthalocyanine compounds and mixtures thereof.
- 25 11. A method of curing a composition for use with an electronic device comprising the steps

of applying the composition to a substrate, placing an electronic component adjacent to the composition and subjecting the composition to a near infrared radiation source for a time sufficient to cure the composition.

12. The method of claim 11, wherein the composition is conductive, resistive or anisotropically conductive.
13. The method of claim 11, further comprising the step of adding a near infrared absorbing additive to the composition before the composition is applied to the substrate.
14. The method of claim 11, wherein the composition is exposed to a near infrared radiation source for less than about 10 seconds.
- 10 15. The method of claim 14, wherein the composition is exposed to a near infrared radiation source for less than 2 seconds.
16. The method of claim 15, wherein the composition is exposed to a near infrared radiation source for less than 0.5 seconds.
17. The composition of claim 11, wherein the composition is cured by exposure to near infrared radiation having a peak wavelength in the range of from about 700nm to about 15 5,000nm.
18. The method of claim 11, wherein the composition is cured for a sufficient time so that the resistance of the composition is less than about 2 ohms.
19. The method of claim 18, wherein the composition is cured for a sufficient time so that the 20 resistance of the composition is less than about 1.5 ohms.
20. A composition for use in electronic devices comprising an effective amount of a near infrared absorbing ingredient to increase the cure speed of the composition upon exposure of the composition to near infrared radiation.
21. The composition of claim 20, wherein the composition is conductive, resistive or 25 anisotropically conductive.
22. The composition of claim 20, wherein the composition comprises one or more resins and one or more fillers.
23. The composition of claim 22, wherein the one or more resins are selected from the group

consisting of epoxy, cyanate ester, acrylates and mixtures thereof.

24. The composition of claim 23, wherein the one or more fillers are selected from the group consisting of silver, copper, gold, palladium, platinum, carbon black, carbon fiber, graphite, aluminum, indium tin oxide, silver coated copper, silver coated aluminum, 5 metallic coated glass spheres, antimony doped tin oxide, talc, silica, silicate, aluminum nitride, mica, ceramic, barium titanate, titanium dioxide, nanofillers, silicate, carbon nanotubes, and mixtures thereof.

25. The composition of claim 20, further comprising one or more of the group consisting of 10 corrosion inhibitors, diluents, oxygen scavengers, adhesion promoters or mixtures thereof.

26. The composition of claim 20, wherein the near infrared absorbing additive is selected from the group consisting of broad-band NIR absorbers, carbon black, graphite, Solvent Red (2',3-dimethyl-4-(2-hydroxy-naphthylazo)azo-benzene), Solvent Green, dyes, cyanine-based dyes, oxides, titanium dioxide, tetrakis(dialkylaminophenyl)aminium dyes, 15 squarylium dyes, metal complexes, quinone, azo, radical multiphenylmethane, perylene, aromatic annulenes, fluorenylium, halogen substituted 1,4,5,8-tetraanilioanthraquinones, squaraine, phthalocyanine compounds and mixtures thereof.

27. The composition of claim 20, wherein the composition is curable upon exposure to near 20 infrared radiation source for a time of less than ten seconds.

28. The composition of claim 27, wherein the composition is curable upon exposure to a near infrared radiation source for a time of less than two seconds.

29. The composition of claim 28, wherein the composition is curable upon exposure to a near 25 infrared radiation source for a time of less than about 0.5 seconds.

30. The composition of claim 20, wherein the composition is capable of cure by exposure to near infrared radiation having a peak wavelength in the range of from about 700nm to about 5,000nm.

31. The composition of claim 20 which is capable of cure upon exposure of less than about 1200 watts/sq inch of near infrared energy for a period of less than about 10 seconds.

32. The composition of claim 31 which is capable of cure upon exposure of less than about 800 watts/sq inch of near infrared energy for a period of less than about 10 seconds.
33. The composition of claim 20 wherein the near infrared absorbing ingredient comprises an organic dye.
- 5 34. The composition of claim 20 wherein the near infrared absorbing ingredient comprises one or more pigments.
35. The composition of claim 34 wherein the pigment is carbon black.
36. The composition of claim 34 wherein the pigment is graphite.
37. The composition of claim 20, wherein the composition is a conductive adhesive.
- 10 38. A substrate comprising the composition of claim 19.
39. The substrate of claim 38 wherein the composition is applied to at least one predetermined location of the substrate by jet dispensing, roll coating, painting, dry-brushing, dip coating spraying, slot-coating, swirl spraying, printing, flexographic, extrusion, atomized spraying, fiberization, gravure, electrostatic, vapor deposition and/or screen printing.
- 15 40. The substrate of claim 38 wherein the composition is applied as a discontinuous coating.
41. The substrate of claim 38 wherein the composition is applied as a continuous coating.
42. The substrate of claim 38 which is an electronic circuit board.
43. An electronic device containing the composition of claim 20.

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